

Appl. No. 10/644,442
Amdt. Dated March 14, 2005
Reply to Office action of September 13, 2004

Amendments to the Specification:

Please replace paragraph [0021] with the following amended paragraph:

[0021] Thus, the driveline assembly of Figure 1 is a multi-sectional propeller shaft driveline assembly including two propeller shaft portions 9, 10, at least one of which is a propeller shaft having improved structural rigidity in accordance with the present invention. The present invention may also be used to advantage front-wheel drive, all-wheel drive, rear-wheel drive or other four-wheel drive driveline configurations. The improved propeller shaft of the present invention can also be used to advantage driveline assemblies having a singular propeller shaft (omitting the second joint 13), or propeller shaft assemblies having more than two propeller shaft portions. Indeed, due to the improved rigidity, the second joint 13 may not be necessary to provide the desired NVH (Noise, Vibration, and Harshness) characteristics of the driveline.

Please replace paragraph [0025] with the following amended paragraph:

[0025] Adhesives may also be used to secure the support member 30 within the interior space 26 of the tube 20. To improve the adhesive bond between the end 38 of the radial element 32 and the interior surface 22 of the tube 20, one or more of the ends 38 can include an axial groove 43 running lengthwise in the outer surface 40 of the radial element 32. Alternatively, or in addition, the end 38 can include a circumferential notch or groove 44 for receiving adhesive. The axial groove ~~[[42]]~~ 43 can be continuous along the length of the entire support member 30, or be discontinuous and spaced along the axial length of the support member 30. Similarly, the circumferential grooves 44 can be placed at various spacing intervals along the length (L1) of the support member 30.

Please replace paragraph [0027] with the following amended paragraph:

[0027] Referring now to Figure 3, there is shown a longitudinal sectional view of the propeller shaft of Figure 2. As can be seen in Figure 3, the length (L1) of the support member 30 can vary with respect to the length (L2) of the tube 20. Length (L1) designates the length of

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support member 30 and, as illustrated, also radial element 33. As illustrated, radial element 33 extend the length (L1) of support member 30, however, the present invention also contemplates other lengths and configurations for radial element 33. Also, for simplicity, end connecting members such as a stub shaft or inner or outer joint part have been omitted from Figure 3. Such end connection members are represented generically by plugs 46 although such plugs 46 may also be employed in addition to a shaft connecting member. Figure 3 further illustrates an additional embodiment having radial element 33 without the axial groove 43 as shown in Figure 2. The various drawings are simply intended to show that the present invention is not limited to the radial elements 32, 33 having grooves 43.

Please replace paragraph [0030] with the following amended paragraph:

[0030] Referring now to Figure 4, there is shown a cross-sectional view of another embodiment of a propeller shaft in accordance with the present invention. The embodiment shown in Figure 4 is similar in all respects to that of Figure 2 with the exception that six radial elements 32' are shown instead of four. Thus, Figure 4 represents another example of a spoke configuration for the center hub 34 and radial elements 32' of the support member 30' to improve the rigidity of the thin-walled tube 20. An even or odd number of radial elements 30, 32' can be employed with the number of radial elements 32, 32' varying between three and eight. Fewer than three radial elements are unlikely to increase the bending frequency of the completed propeller shaft and more than eight radial elements are unlikely to further increase the bending frequency of the propeller shaft without undesirably increasing the weight of the overall assembly. Additionally, Figures 2 and 4 illustrate radial elements 32, 32' as opposing pairs of radial elements 32, 32'. In Figure 2 there are two opposing pairs of radial elements and in Figure 4 there are 3 opposing pairs of radial elements. However, the present invention is not limited to any specific number or configuration of radial elements 32, 32'. The present invention contemplates any number of radial elements 32, 32' between three and eight configured as opposing pairs or independently.